

# Center for Value Added Seed Technology

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## **Background**

Established in 1991 to produce value-added crops:  
(i) drought resistant turf grasses for roadways, lawns, golf courses (require 30-40% less water),  
(ii) forage grasses with superior yield under arid land conditions, and (iii) hybrid vigor in wheat using molecular biology.

## **Technology Development Progress**

- Conventional plant breeding of forage and turf grasses collected worldwide.
- Molecular genetic markers to move genes of interest from weedy grass species into commercial forage and cereal crops.
- Plant tissue culture to clone unique agricultural, horticultural and forestry plants.
- Microbiology and plant physiology to improve methods for the genetic engineering of major crops.
- Procedures to mass clone superior crop and forestry plants and to genetically engineer cereals, cotton, and other crops.



Screening grasses in saline solution...part of breeding program to develop improved grasses for resistance to high salinity that is found along roadsides in Utah

## **Highlights and Accomplishments**

- **A unique commercial opportunity** is being pursued for the low maintenance, drought tolerant grass variety, developed at the center, for roadside plantings. Contacts through the National Roadside Vegetation Managers Association has led to establishing 15 test plots with various state Departments of Transportation, including Colorado, Idaho, Oregon, Washington, Montana, Nevada & Utah. A significant market opportunity appears to be developing.
- **Conventional plant breeding:** Breeder turfgrass seed selected for color vegetative spread, leaf width, turf quality and response to drought has been produced and distributed.
- **Molecular genetic marker technology:** The DNA based genetic markers for apomixis (asexual seed formation) genes are being used to tag apomictic Australian wheat grasses.
- **Plant tissue culture:** These show promise for use in the mass cloning and genetic engineering of agronomic, horticultural, and forestry plants.
- **Turf and forage grass cultivars** released by CFAST will be protected by the Plant Variety Protection Act. A significant number of companies as well as the United States Golf Association have expressed interest.
- **Bioreactors:** CFAST is collaborating with federal and private labs to develop bioreactors for the cloning of crops and forestry trees and to improve genetic engineering procedures.

## **Summary Data:**

### **Current**

1995-96 Award .....	\$100,000
Matching Funds .....	\$209,944
Plant Variety Protection .....	1
License Agreements .....	0
Spin-off Companies .....	0
Companies Assisted .....	0
Industry Jobs .....	0
Center Jobs .....	10

### **Cumulative**

Awards .....	\$380,000
Matching Funds .....	\$823,398
Plant Variety Protection .....	4
License Agreements .....	0
Spin-off Companies .....	0